PATENT
Docket No. 00-8015
Application Serial No. 09/656,868

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (currently amended) A method for predicting digital subscriber line (DSL) performance on an existing telephone loop, comprising:

obtaining a topological description of the existing telephone loop;

identifying [[an]] a straight loop of a particular length and a particular gauge that is equivalent [[loop]] to the existing telephone loop, as an equivalent loop, based on [[from]] the topological description of the existing telephone loop;

determining DSL performance for the equivalent loop; and

predicting DSL performance for the existing telephone loop [[from]] based on the DSL performance for the equivalent loop.

2.   (currently amended) The method of claim 1, wherein the obtaining includes:

receiving at least one of a frequency, length, gauge, temperature, [[and]] or insulation type associated with the existing telephone loop.

3.   (original) The method of claim 1, further comprising:

determining an insertion loss for the existing telephone loop based on the topological description of the existing telephone loop.

4.   (original) The method of claim 3, further comprising:

- 2 -

determining a DSL capacity of the existing telephone loop using the insertion loss for the

existing telephone loop.

5.   (original) The method of claim 4, wherein the determining a DSL capacity

includes:

creating a loss curve using the insertion loss, and

integrating the loss curve to determine the DSL capacity of the existing telephone

loop.

6.   (original) The method of claim 4, wherein the determining a DSL capacity

includes:

creating a loss curve based on the insertion loss over a plurality of frequencies,

and

determining an area below the loss curve over the plurality of frequencies, the area

corresponding to the DSL capacity of the existing telephone loop.

7.   (original) The method of claim 4, wherein the existing telephone loop includes an

upstream path and a downstream path; and

wherein the determining a DSL capacity includes:

separately determining the DSL capacity for each of the upstream and downstream

paths.

- 3 -

8.   (original) The method of claim 1, further comprising:

determining a DSL capacity of the existing telephone loop from the topological

description of the existing telephone loop.

9.   (original) The method of claim 8, wherein the existing telephone loop includes an

upstream path and a downstream path; and

wherein the determining a DSL capacity includes:

        separately determining the DSL capacity for each of the upstream and downstream

paths.

10.   (original) The method of claim 9, wherein the identifying includes:

        determining equivalent loops corresponding to each of the upstream and

downstream paths.

11.   (currently amended) The method of claim 8, wherein the identifying includes:

        using the DSL capacity to identify the equivalent loop[[, the equivalent loop

including a straight loop of a particular length]].

12.   (original) The method of claim 11, wherein the using includes:

        locating the DSL capacity in a table, and

        finding the equivalent loop that corresponds to the DSL capacity in the table.

- 4 -

13. (currently amended) The method of claim 11, wherein the using includes:

determining the particular length of the straight loop from information regarding

at least one of bridged-taps, gauge, temperature, [[and]] or insulation type associated with

the existing telephone loop.

14. (original) The method of claim 1, wherein the determining DSL performance for

the equivalent loop includes:

selecting DSL performance data from a plurality of previously-obtained DSL

performance data.

15. (original) The method of claim 1, wherein the determining DSL performance for

the equivalent loop includes:

selecting DSL performance data from a plurality of DSL performance data for

loops of different lengths under different crosstalk conditions.

16. (original) The method of claim 1, wherein the predicting includes:

determining spectral interference conditions associated with the existing telephone

loop, and

predicting the DSL performance of the existing telephone loop based on the DSL

performance for the equivalent loop and the determined spectral interference conditions.

17.   (currently amended) A system for predicting digital subscriber line (DSL) performance on existing telephone loops, comprising:

    means for obtaining topological descriptions of the existing telephone loops;

    means for identifying <u>loops of one or more particular lengths and a single particular gauge that are</u> equivalent [[loops]] to the existing telephone loops, <u>as equivalent loops, based on</u> [[from]] the topological descriptions of the existing telephone loops;

    means for determining DSL performance for the equivalent loops; and

    means for predicting DSL performance for the existing telephone loops from the DSL performance for the equivalent loops.

18.   (currently amended) A system for estimating digital subscriber line (DSL) performance on customer telephone loops, comprising:

    a memory configured to store instructions; and

    a processor configured to execute the instructions to<u>:</u>

        receive information regarding the customer telephone loops,

        identify <u>straight loops of one or more particular lengths and a corresponding one or more particular gauges that are</u> equivalent [[loops corresponding]] to the customer telephone loops, <u>as equivalent loops, based on</u> [[using]] the received information,

        determine DSL performance for the equivalent loops, and

        estimate DSL performance for the customer telephone loops from the DSL performance for the equivalent loops.

- 6 -

19.   (currently amended) The system of claim 18, wherein when receiving information

regarding the customer telephone loops, the processor is configured to receive at least one of a

frequency, length, gauge, temperature, [[and]] or insulation type associated with each of the

customer telephone loops.

20.   (original) The system of claim 18, wherein the processor is further configured to

determine an insertion loss for each of the customer telephone loops based on the received

information for the customer telephone loops.

21.   (original) The system of claim 20, wherein the processor is further configured to

determine a DSL capacity of each of the customer telephone loops using the insertion loss for the

existing telephone loops.

22.   (original) The system of claim 21, wherein when determining a DSL capacity of

each of the customer telephone loops, the processor is configured to create a loss curve using the

insertion loss and integrate the loss curve to determine the DSL capacity of the customer

telephone loop.

23.   (original) The system of claim 21, wherein when determining a DSL capacity of

each of the customer telephone loops, the processor is configured to create a loss curve based on

the insertion loss over a plurality of frequencies and determine an area below the loss curve over

- 7 -

the plurality of frequencies, the area corresponding to the DSL capacity of the customer

telephone loop.

24.   (original) The system of claim 21, wherein each of the customer telephone loops

includes an upstream path and a downstream path; and

wherein when determining a DSL capacity of each of the customer telephone loops, the

processor is configured to separately determine the DSL capacity for each of the upstream and

downstream paths.

25.   (original) The system of claim 18, wherein the processor is further configured to

determine a DSL capacity of each of the customer telephone loops from the received information

for the customer telephone loops.

26.   (original) The system of claim 25, wherein each of the customer telephone loops

includes an upstream path and a downstream path; and

wherein when determining a DSL capacity of each of the customer telephone loops, the

processor is configured to separately determine the DSL capacity for each of the upstream and

downstream paths.

27.   (original) The system of claim 26, wherein the processor is configured to

determine equivalent loops corresponding to each of the upstream and downstream paths.

- 8 -

28.   (currently amended) The system of claim 25, wherein the processor is configured

to use the DSL capacity corresponding to each of the customer telephone loops to identify the

equivalent loops[[, each of the equivalent loops including a straight loop of a particular length]].

29.   (original) The system of claim 28, wherein the processor is configured to locate

the DSL capacity corresponding to each of the customer loops in a table and find the equivalent

loops that correspond to the DSL capacities in the table.

30.   (currently amended) The system of claim 28, wherein the processor is configured

to determine the one or more particular lengths of the straight loops from information regarding

at least one of bridged-taps, gauge, temperature, [[and]] or insulation type associated with each of

the customer telephone loops.

31.   (original) The system of claim 18, wherein when determining DSL performance

for each of the equivalent loops, the processor is configured to select DSL performance data from

a plurality of previously-obtained DSL performance data.

32.   (original) The system of claim 18, wherein when determining DSL performance

for each of the equivalent loops, the processor is configured to select DSL performance data from

a plurality of DSL performance data for loops of different lengths under different crosstalk

conditions.

- 9 -

33.   (original) The system of claim 18, wherein the processor is configured to determine spectral interference conditions associated with each of the customer telephone loops and predict the DSL performance of the customer telephone loops based on the DSL performance for the equivalent loops and the determined spectral interference conditions.

34.   (currently amended) A computer-readable medium that stores instructions executable by one or more processors to perform a method for estimating digital subscriber line (DSL) performance on a customer telephone loop, comprising:

instructions for determining operating conditions for the customer telephone loop;

instructions for identifying a loop of a particular length and a particular gauge that corresponds to the customer telephone loop operating under the determined operating conditions;

instructions for determining DSL performance for the loop of the particular length and the particular gauge; and

instructions for estimating DSL performance for the customer telephone loop from the DSL performance for the loop of the particular length and the particular gauge.

35.   (currently amended) A method for estimating digital subscriber line (DSL) performance on a telephone line, comprising:

identifying [[an equivalent]] a straight cable of a particular length and a particular gauge that corresponds to the telephone line;

determining DSL performance on the straight cable; and

- 10 -

estimating DSL performance on the telephone line based on the determined DSL

performance on the straight cable.

36.   (currently amended) A method for predicting asymmetric digital subscriber line

(ADSL) performance on an existing telephone loop, comprising:

determining characteristics and operating conditions of the existing telephone loop;

calculating ADSL capacity of the existing telephone loop based on the determined

characteristics;

identifying [[an]] a loop of a particular length and a particular gauge that is equivalent

[[loop] to the existing telephone loop based on the ADSL capacity and the determined operating

conditions of the existing telephone loop;

determining ADSL performance on the equivalent loop; and

predicting ADSL performance on the existing telephone loop from the determined ADSL

performance on the equivalent loop.